SECTION 01 81 13 – SUSTAINABLE DESIGN REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes general requirements and procedures for compliance with certain U.S. Green Building Council (USGBC) LEED for Homes prerequisites and credits needed for the Project to obtain a minimum LEED Silver certification under the LEED for Homes, Low-Rise Multi-Family, and single family program for California.

1. Other LEED for Homes prerequisites and credits needed to obtain LEED certification are dependent on material selections and may not be specifically identified as LEED requirements. Compliance with requirements needed to obtain LEED prerequisites and credits may be used as one criterion to evaluate substitution requests.
2. Additional LEED for Homes prerequisites and credits needed to obtain the indicated LEED certification are dependent on the Architect's design and other aspects of the Project that are not part of the Work of the Contract.

B. Related Sections include the following:

1. Divisions 1 through 33 Sections for LEED requirements specific to the Work of each of those Sections. These requirements may or may not include reference to LEED for Homes.

1.3 DEFINITIONS

A. Certificates of Chain-of-Custody: Certificates signed by manufacturers certifying that wood used to make products was obtained from forests certified by a Forest Stewardship Council (FSC)-accredited certification body to comply with FSC 1.2, "Principles and Criteria." Certificates shall include evidence that mill is certified for chain-of-custody by an FSC-accredited certification body.

B. LEED: Leadership in Energy & Environmental Design.

C. Local Materials: Materials that are extracted, processed, and manufactured within a radius of 500 miles (800 km) from the Project location. Manufacturing refers to the final assembly of components into the building product that is installed at the Project site.

D. Recycled Content: The percentage by weight of constituents that have been recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (pre-consumer), or after consumer use (post-consumer).

1. Spills and scraps from the original manufacturing process that are combined with other constituents after a minimal amount of reprocessing for use in further production of the same product are not recycled materials.
2. Discarded materials from one manufacturing process that are used as constituents in another manufacturing process are pre-consumer recycled materials.

1.4 SUBMITTALS

A. General: Submit additional LEED submittal requirements included in other sections of the Specifications.

B. LEED submittals are in addition to other submittals. If submitted item is identical to that submitted to comply with other requirements, copy LEED for Homes Green Rater on the same submittal to verify compliance with indicated LEED for Homes requirements.

C. LEED Letter Action Plan: Provide letter plan within **30** days of date established for **the Notice to Proceed** documenting how the following requirements will be met.

1. Prerequisite MRp3.1 and Credit MRc3.2: Waste management approach complying with Division 1 Section "Construction Waste Management". Approach shall document goal of achieving a minimum 75% waste diversion rate from the construction phase.

2. Credit MRc2.2: List of proposed materials with recycled content.

a. Indicate post-consumer recycled content, and pre-consumer recycled content percentages for each targeted product having recycled content:
1) Roof, Floor, Wall Insulation

3. Credit MRc2.2: List of proposed locally extracted, processed, and manufactured materials.

a. Identify each targeted locally extracted, processed, and manufactured material, and its source:
1) Foundation aggregate
2) Foundation cement
3) Exterior siding material (stone, stucco)

4. Credit EQc8.1: Construction indoor air quality management strategy addressing:
a. Duct sealing measures and photo-documentation

b. 48-hour, pre-occupancy flushout

D. LEED Documentation Submittals:

1. Prerequisite IDp2.1: Completed project Durability Evaluation & Checklist with Contractor initials prior to construction. Manufacturer documentation for non-paper faced backer behind tile, or paper-faced backer board that meets the mold resistant standard ASTM D 3273 with a score of 10 behind fiberglass surrounds only, at tub, showers, and spa areas. General Contractor shall provide photo documentation for each strategy listed on the project LEED for Homes Durability Checklist. A minimum 4 photographs shall be provided for each listed strategy. Photos shall be labeled based on the strategy and date stamped.

2. Credit SSp2.1,SSc2.2, SSc2.3 and SSc2.4: Landscaping plant list

3. Credit WEc2.1: Manufacturer documentation for irrigation systems installed confirming:
   a. 50% drip irrigation
   b. Separate zones for each bedding type
   c. Timer or controller for each watering zone

4. Credit WEc3.1 and c3.2: Manufacturer documentation for bathroom plumbing fixtures indicating water consumption.

5. Prerequisite EAp1.1: Copy of building energy analysis in TDV energy. Analysis shall include all HERS verifications including Thermal Bypass Checklist (TBC). HVAC equipment performance and glazing values (National Fenestration Rating Council (NFRC) labels for confirming window and door U-factor and Solar Heat Gain Coefficient (SHGC)) documented on manufacturer information, shall correspond to the values modeled on the building energy analysis. Minimum criteria are those outlined in the Energy Star Certified Homes, Version 3, National Program Requirements. Cooling equipment, heating equipment, water heater, lighting & appliances documentation that meet or exceed the requirements for the Energy Star Certified Homes, Version 3, National Program Requirements; see the USEPA document (rev 6/1/2013) at the end of this specification section.

6. Credit EAc8.3: Manufacturer documentation for all in-unit lighting fixtures or lamps confirming Energy Star certified lamping or fixtures are installed in 80% of RESNET-defined Qualifying Light Fixture locations.

7. Credit EAc9.1: Manufacturer documentation or Owner's contract confirming refrigerator, clothes and dish washer appliances specified.

8. Prerequisite EAp11.1: Proof of proper refrigerant charge of the air-conditioning system.

9. Prerequisite MRp1.1: Framing Order Waste Factor Calculation based on LEED for Homes Rating System, October 2010, CA version, 2011 Update, Table 22 example, demonstrating less than 10% waste factor.

10. Prerequisite MRp2.1: Provide copy of notice to all wood product suppliers and their response.

    a. Include statement indicating builder's preference is to purchase products containing tropical wood only if it is FSC-certified.
    b. Request the country of manufacture of each product supplied.
    c. Request a list of FSC-certified tropical wood products the vendor can supply.

11. Prerequisite MRp2.1: For all FSC wood, provide vendor invoice confirming if product is "FSC-Pure", "FSC-Mixed", or "FSC-X%", and the FSC Chain-of-Custody (COC) number.

12. Credit MRc2.2: Product Data indicating percentages by weight of post-consumer and pre-consumer recycled content for targeted products having recycled content.

    a. Window Frame
    b. Roof, Floor, Wall insulation

13. Credit MRc2.2: Product Data indicating location of material extraction, processing, and manufacture for targeted locally produced materials. Include statement indicating distance from extraction to Project, processing to Project, and manufacture to Project for each regionally manufactured material.

    a. Foundation aggregate
    b. Foundation cement
    c. Exterior wall siding (stone and stucco)

14. Credit MRc2.2: Product Data for adhesives and sealants used on the interior of the building indicating VOC content of each product used. Indicate VOC content in g/L calculated according to 40 CFR 59, Subpart D (EPA method 24) and compared with criteria established by the South Coast Air Quality Management District (SCAQMD) Rule #1168.

15. Credit MRc2.2: Product Data for paints and coatings used on the interior of the building indicating compliance with Green Seal Standard GS-11, Paints, 1st Edition, May 20, 1993; Green Seal Standard GC-03, Anti-Corrosive Paints, 2nd Edition, January 7, 1997; South Coast Air Quality Management District (SCAQMD) Rule #1113. Indicate VOC content in g/L calculated according to 40 CFR 59, Subpart D (EPA method 24).

16. Prerequisite MR 3.1 and Credit MR3.2: Comply with Division 1 Section "Construction Waste Management." Provide summary of waste handling tags, documenting final demolition and construction debris waste diversion rate over the entire construction phase. A separate rate shall be documented for the demolition phase, and for the construction phase.

17. Prerequisite EQp2.1: Product Data and plan showing type and locations of carbon monoxide monitoring units.

18. Prerequisite EQp5.1: Manufacturer documentation confirming kitchen hood exhaust rate, bathroom exhaust fan Energy Star listing and exhaust rate.

19. Prerequisite EQp6.1: Room-by-Room HVAC sizing calculations based on Air Conditioning Contractors of America (ACCA) Manual J including the following.

    a. Outdoor room temperatures shall be 99% design temperatures as published in the ASHRAE Handbook of Fundamentals for the building location.
    b. Indoor temperatures shall be 75F for cooling
    c. Infiltration rate shall be selected as tight
    d. Insulation and glazing u-values shall be as specified.

20. Prerequisite EQp6.1: Room-by-Room HVAC duct sizing calculations shall be based on the Air Conditioning Contractors of America (ACCA) Manual D including the following.

    a. Design loads for each room correspond to output from HVAC sizing and EnergyPro analysis.
    b. Calculate Total Effective Length (TEL) for the longest supply and duct run in each zone.
    c. Calculate expected pressure drop across filter and coil in each zone.
    d. Calculate expected static pressure from the air handler in each zone.
    e. Calculate air flow rates for each register in every room.

21. Prerequiste EQp7.1:

    a. Product Data for filtration media used during occupancy confirming minimum MERV8 efficiency.

22. Credit EQc8.1:

    a. Minimum 20 photographs documenting duct sealing measures during construction. Photographs shall be date stamped and timed at two different times during construction.

23. Credit EQc8.3:

    a. Signed statement on Contractor letterhead describing the building air flush-out procedures including the dates when flush-out was begun and completed and statement that filtration media was replaced after flush-out.
    b. Product Data for filtration media used during flush-out and during occupancy.

24. Credit EQp11.1: Proof of refrigerant charge for HVAC units.

PART 2 - PRODUCTS

2.1 LANDSCAPING PLANTS

A. Prerequisite SSp2.1: Plant material for project landscaping shall not be listed on the local plant council inventory for invasive species.

B. Credit SSc2.3: Conventional (non-drought-tolerant, with no dormancy period) turf shall not exceed 40% of the landscape softscape area.

2.2 WATER EFFICIENT FIXTURES

A. Credit WEc3.1 and WEc3.2: Provide water efficient fixtures.

1. Toilet average flow rate ≤ 1.3 gpf
2. Lavatory faucet average flow rate ≤ 1.5 gpm
3. Showerhead average flow rate ≤ 1.75 gpm

2.3 MOISTURE CONTROL PRODUCTS

A. Prerequisite IDp2.1: Non-paper faced backer board behind tile areas, or paper-faced backer board that meets the mold resistant standard ASTM D 3273 with a score of 10 behind fiberglass surrounds, shall be used at tub, shower, and spa areas.

2.4 ENERGY EFFICIENT ENVELOPE

A. Prerequisite EAp1.1: Envelope, windows, and doors that meet or exceed the requirements for the Energy Star Certified Homes, Version 3, National Program Requirements; see the USEPA document (rev 6/1/2013) at the end of this specification section.

2.5 ENERGY EFFICIENT APPLIANCES

A. Prerequisite EAp1.1: Cooling equipment, heating equipment, water heater, lighting & appliances that meet or exceed the requirements for the Energy Star Certified Homes, Version 3, National Program Requirements; see the USEPA document (rev 6/1/2013) at the end of this specification section.

B. Credit EAc7.2: Provide R-4 insulation on all domestic hot water piping.

C. Credit EAc9.1 & EAc9.2: Provide energy and water efficient appliances

1. Clotheswashers shall have Modified Energy Factor (MEF) ≥ 2.0, Water Factor (WF) < 5.5.
2. Dishwashers shall be Energy Star and have water usage ≤ 6.0 gal/cycle.
3. Refrigerators shall be Energy Star.

2.6 RECYCLED CONTENT OF MATERIALS

A. Credit MR 2.2: Provide building materials with recycled content such that post-consumer recycled content constitutes a minimum percent of a given assembly. Pre-consumer recycled content materials may be credited at half the rate of post-consumer content. Required assemblies are as follows:

1. Window frames, with 25% post-consumer recycled content
2. Roof, Floor, Wall Insulation, with 20% post-consumer recycled content

2.7 LOCALLY PRODUCED MATERIALS

A. Credit MRc2.2: Provide building materials that are over 90% (by weight or volume) extracted from a location within 500 mile radius of the project site.

1. Foundation aggregate
2. Foundation cement
3. Exterior wall siding (stone & stucco)

2.8 WOOD

A. Prerequisite MRp2.1: All wood products made from species of wood grown between the Tropics of Cancer and Capricorn shall be FSC-certified.

1. Wood-based materials include but are not limited to the following materials when made from wood, engineered wood products, or wood-based panel products:

a. Rough carpentry.
b. Miscellaneous carpentry.
c. Heavy timber construction.
d. Wood decking.
e. Metal-plate-connected wood trusses.
f. Structural glued-laminated timber.
g. Finish carpentry.
h. Architectural woodwork.
i. Wood paneling.

j. Wood veneer wall covering.
k. Wood flooring.
l. Wood lockers.
m. Wood cabinets.
n. Non-rented temporary construction, including bracing, concrete formwork, pedestrian barriers, and temporary protection.

2.9 LOW-EMITTING MATERIALS

A. Credit MRc2.2: For all applications within weather envelope use adhesives and sealants that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA method 24):

1. Wood Glues: 30 g/L.
2. Metal to Metal Adhesives: 30 g/L.
3. Adhesives for Porous Materials (Except Wood): 50 g/L.
4. Subfloor Adhesives: 50 g/L.
5. Plastic Foam Adhesives: 50 g/L.
6. Carpet Adhesives: 50 g/L.
7. Carpet Pad Adhesives: 50 g/L.
8. VCT and Asphalt Tile Adhesives: 50 g/L.
9. Cove Base Adhesives: 50 g/L.
10. Gypsum Board and Panel Adhesives: 50 g/L.
11. Rubber Floor Adhesives: 60 g/L.
12. Ceramic Tile Adhesives: 65 g/L.
13. Multipurpose Construction Adhesives: 70 g/L.
14. Fiberglass Adhesives: 80 g/L.
15. Structural Glazing Adhesives: 100 g/L.
16. Wood Flooring Adhesive: 100 g/L.
17. Contact Adhesive: 250 g/L.
18. Plastic Cement Welding Compounds: 350 g/L.
19. ABS Welding Compounds: 400 g/L.
20. CPVC Welding Compounds: 490 g/L.
21. PVC Welding Compounds: 510 g/L.
22. Adhesive Primer for Plastic: 650 g/L.
23. Sealants: 250 g/L.
24. Sealant Primers for Nonporous Substrates: 250 g/L.
25. Sealant Primers for Porous Substrates: 775 g/L.

B. Credit MRc2.2: For all applications within weather envelope use paints and coatings that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA method 24) and the following chemical restrictions:

1. Flat Paints and Coatings: VOC not more than 50 g/L.
2. Non-Flat Paints and Coatings: VOC not more than 150 g/L.
3. Anti-Corrosive Coatings: VOC not more than 250 g/L.

4. Varnishes and Sanding Sealers: VOC not more than 350 g/L.
5. Stains: VOC not more than 250 g/L.
6. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
7. Restricted Components: Paints and coatings shall not contain any of the following:

    a. Acrolein.
    b. Acrylonitrile.
    c. Antimony.
    d. Benzene.
    e. Butyl benzyl phthalate.
    f. Cadmium.
    g. Di (2-ethylhexyl) phthalate.
    h. Di-n-butyl phthalate.
    i. Di-n-octyl phthalate.
    j. 1,2-dichlorobenzene.
    k. Diethyl phthalate.
    l. Dimethyl phthalate.
    m. Ethylbenzene.
    n. Formaldehyde.
    o. Hexavalent chromium.
    p. Isophorone.
    q. Lead.
    r. Mercury.
    s. Methyl ethyl ketone.
    t. Methyl isobutyl ketone.
    u. Methylene chloride.
    v. Naphthalene.
    w. Toluene (methylbenzene).
    x. 1,1,1-trichloroethane.
    y. Vinyl chloride.

C. Credit MRc2.2: Specify low-emitting materials for the following assemblies:
    1. Roof, floor, wall insulation shall be low-emitting (LEM) and listed in the Collaborative for High Performance Schools (LEM) Section 07200 listing of qualified products (http://chps.net/manual/lem_table.htm#BuildingI)

2.10 VENTILATION

A. Prerequisite EQ 5.1: Provide high efficiency exhaust ventilation meeting the following minimum requirements.

    1. Kitchen Exhaust Hood, minimum 100 cfm
    2. Bathroom Fan, Energy Star, minimum 50 cfm

PART 3 - EXECUTION

3.1 LANDSCAPE

A. Credit SSc2.2: All designed landscape softscapes shall include the following requirements:
1. Any turf must be drought-tolerant.
2. No turf used in densely shaded areas
3. No turf on areas with a slope of 25%
4. Use mulch and soil amendments

3.2 PEST CONTROL

A. Credit SSc5:
1. Seal all external cracks, joints, penetrations, edges, and entry points with caulking. Where openings cannot be sealed, install rodent- and corrosion-proof screens. Protect exposed foundation insulation with moisture-resistant, pest-proof cover.

3.3 CONSTRUCTION WASTE MANAGEMENT

A. Prerequisite MRp3.1 and Credit MRc3.2: Comply with Division 1 Section "Construction Waste Management."

3.4 INSULATION & SEALING

A. Prerequisite EAp1.1: Install all building insulation consistent with the procedure documented in the **California Energy Star Homes Program, High Quality Insulation Installation and Thermal Bypass Checklist (TBC) Procedures document**.

B. A Home Energy Rating Services (HERS) Rater is separately contracted to perform pre-drywall verification of adherence to the California ENERGY STAR Homes combined Quality Insulation Installation and Thermal Bypass Checklist Procedures. Coordinate with HERS Rater prior to any drywall and insulation installation to review inspection goals. Complete corrections per the direction of HERS Rater prior to drywalling.

C. Thermal Bypass Checklist Requirements
1. Insulation must be in contact with air barrier on all six sides. At walls between conditioned and unconditioned spaces (corridors, stairs, trash rooms, laundry rooms, misc. storage rooms) where resilient channels will be installed, an air barrier must be installed over studs, in contact with insulation, before resilient channels are installed. Air barrier should be protected, and any tears repaired prior to Thermal Bypass Checklist (TBC) prior to installation of drywall.
2. Behind tub/shower and under stairs within conditioned space, insulation in walls between conditioned and unconditioned spaces (see No. 1) must be in contact with air barrier on five sides. Not required to fill the space, but the cavity is required to be air

tight. Insulation, drywall and TBC inspection must be performed at bathroom locations before tubs are set.

3. At double walls, the entire cavity (both stud bays) must be filled with insulation, or an air barrier must be installed between the stud bays allowing insulation to be in contact with air barrier on all six sides. Alternatively, at skid walls (metal framed walls within wood framed walls containing plumbing or mechanical chases), exterior wall must be insulated in contact with air barrier on six sides, and verified prior to closing wall and building skid wall.
4. Where interior walls intersect exterior and at corners, as structural drawings allow, exterior stud special attention must be paid to allow for insulation of the wall to the proper R-value (review with framer before framing begins).
5. At shear walls and double shear walls TBC inspection must occur and must be verified by the HERS Rater before the wall is closed.
6. Mechanical ducts vented vertically are not allowed to fill an entire stud bay in an exterior wall or in wall between a unit and unconditioned space.
7. Furred out walls (like those behind bathtubs) must be inspected for TBC prior to closing walls. Insulation in an exterior wall, or walls between conditioned and unconditioned space, must be in contact with the air barrier on six sides.
8. Rope caulk, foam gasket, or caulking bead around the entire sole plate at all units. Foam gasket must be used at wood to concrete connections.
9. All duct chases, and double walls sealed air tight at the ceiling level. All gaps into shafts larger than 1/8” filled with foam or caulk. Special attention paid to ducts entering shafts from ceiling (this includes trash chutes, corridor ventilation ducts, and other vertical chases which must be sealed at each floor).
10. Insulation in walls between units and unconditioned spaces (see No. 1) must be cut to fit around wiring, piping, or split (delaminated) with insulation on both sides of pipe, wire, or conduit and in contact with the air barrier on six sides.
11. For batt insulation – no single void/depression deeper than ¾” is allowed in any stud bay.
12. Any gaps between studs and insulation larger than 1/8” must be filled with insulation or spray foam.
13. The use of blown-in insulation is encouraged as this will leed to a higher quality installation, and will make passing the TBC inspection easier. Blown-in insulation must still make contact with the air barrier on six sides of each stud or rafter bay. Where SPF (Spray Polyurethane Foam Medium Density) insulation is used, the SPF acts as both insulation and air barrier. SPF should be used at difficult to reach locations.
14. Demising walls must be completely sealed (caulk bottom plate), top plate must be continuous at top of all walls. Contact insulation and air barrier and insulation is not required at demising wall, unless the wall adjoins unconditioned space.
15. All electrical and data junction boxes in insulated walls shall include faceplates with foam gaskets.

D. Thermal and Moisture Protection

1. Ceiling, wall, floor, and slab insulation levels shall meet or exceed 2009 IECC levels. All ceiling, wall floor, and slab insulation shall achieve RESNET-defined Grade I installation or, alternatively, Grade II for surfaces with insulated sheathing.
2. A complete air barrier shall be provided that is fully aligned with the insulation as follows:

a. At interior surface of ceilings in all climate zones
b. At interior edge of attic eave in all climate zones using a wind baffle that extends to the full height of the insulation. Include a baffle in every bay or a tabbed baffle in each bay with a soffit vent that will also prevent wind washing of insulation in adjacent bays.
c. At exterior surface of walls in all climate zones, and at interior surface of walls of floors in all climate zones 4-8.
d. At interior surface of floors in all climate zones, including supports to ensure permanent contact and blocking at exposed edges.

3. Seal all walls, floor and joint penetrations with low-VOC caulking or other appropriate non-toxic sealing methods to prevent pest entry. Provide rodent and corrosive proof screen (e.g. copper or stainless steel mesh or rigid metal cloth) for opening greater than ¼ inch.

E. Building Envelope Sealing
1. Per ASHRAE 90.1-2007 Section 5.4.3.1: The following areas of the building envelope shall be sealed, caulked, gasketed, or weather-stripped to minimize air leakage:
a. Joints around fenestration and door frames
b. Junctions between walls and foundations, between walls at building corners, between walls and structural floors or roofs, and between walls and roof or wall panels
c. Opening at penetrations of utility services through roofs, walls, and floors
d. Site-built fenestration and doors
e. Building assemblies and/or cavities may not be used as ducts or plenums
f. Joints, seams, and penetration of vapor retarders
g. All other openings in the building envelope
h. All electrical and data junction boxes in demising walls shall include faceplates with foam gaskets

3.5 CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT

A. Credit EQc8.1: Upon installation, seal all permanent ducts and vents to minimize contamination during construction. Remove any seals and clean all ductwork after all phases of construction are completed. Comply with SMACNA IAQ Guideline for Occupied Buildings under Construction.

1. If Owner authorizes the use of permanent heating, cooling, and ventilating systems during construction period as specified in Division 1 Section "Temporary Facilities and Controls," install filter media having a MERV 8 according to ASHRAE 52.2 at each return-air inlet for the air-handling system used during construction.
2. Replace all air filters immediately prior to occupancy. Replacement air filters shall have a minimum efficiency of MERV 8 according to ASHRAE 52.2.

B. Credit EQc8.3:

1. Conduct a 48-hour building air flush-out after construction ends with new air filters and open windows. Replace air filters after building air flush-out. Replacement air filters shall have a minimum MERV 8 efficiency according to ASHRAE 52.2.

3.6 DUCTWORK LEAKAGE

A. Prerequisite EAp1.1: Ductwork leakage shall be less than 4 cfm 25 to outdoors per 100 square feet of conditioned space. Ductwork shall be airsealed using UL-181 tape or mastic.
1.

B. ***A Home Energy Rating Services (HERS) Rater is separately contracted to perform duct leakage test to confirm maximum leakage of 6ACH50.***

3.7 CONSTRUCTION SITE SIGNAGE

A. Credit AEc1.3: Display approved signage logo for LEED for Homes projects on construction sites. Signage shall indicate project is designed to achieve LEED for Homes certification. Sign shall be no less than 6 square feet. Coordinate for approved signage logo file with LEED for Homes Green Rater.

END OF SECTION 01 81 13

ENERGY STAR Certified Homes, Version 3 (Rev. 07) National Program Requirements

Certifying Homes

The following homes are eligible to earn the ENERGY STAR:

- Detached dwelling units [1] (e.g. single family homes); OR
- Dwelling units [1] in any multifamily building with 4 units or fewer; OR
- Dwelling units [1] in multifamily buildings with 3 stories or fewer above-grade [2,3]; OR
- Dwelling units [1] in multifamily buildings with 4 or 5 stories above-grade [2,3] that have their own heating, cooling, and hot water systems [4], separate from other units, and where dwelling units occupy 80% or more of the occupiable[3] square footage of the building [5]. When evaluating mixed–use buildings for eligibility, exclude commercial / retail space when assessing whether the 80% threshold has been met.

Dwelling units [1] in multifamily buildings that are not eligible to earn the ENERGY STAR through the Certified Homes Program may be eligible through the Multifamily High Rise Program.

Homes may earn the ENERGY STAR using the following ENERGY STAR Prescriptive Path or Performance Path in all locations except CA, FL, GU, HI, MA, PR, and the Pacific Northwest, for which regional program requirements have been developed.

Note that compliance with these guidelines is not intended to imply compliance with all local code requirements that may be applicable to the home to be built. [6]

ENERGY STAR Prescriptive Path

The Prescriptive Path provides a single set of measures that can be used to construct an ENERGY STAR Certified Home. Modeling is not required; however, no tradeoffs are allowed. Follow these steps to use the Prescriptive Path:

1. First, assess the eligibility to follow the Prescriptive Path by comparing the conditioned floor area (CFA) of the home to be built to the CFA of the Benchmark Home as specified in Exhibit 3. [7] For the purposes of this step, calculate the number of bedrooms and the CFA of the home to be built using RESNET standards with the following exception: floor area in basements with at least half of the gross surface area of the basement's exterior walls below grade shall not be counted. [8] If the CFA of the home to be built exceeds the CFA of the Benchmark Home, then the Performance Path shall be used.
2. If the home to be built is eligible to follow the Prescriptive Path, build the home using all requirements of the ENERGY STAR Reference Design, Exhibit 1, and the Mandatory Requirements for All Certified Homes, Exhibit 2.
3. Using a Rater, verify that all requirements have been met in accordance with the Mandatory Requirements for All Certified Homes and with RESNET's On-Site Inspection Procedures for Minimum Rated Features. [9]

ENERGY STAR Performance Path

The Performance Path provides flexibility to select a custom combination of measures for each home that is equivalent in performance to the minimum requirements of the ENERGY STAR Reference Design Home, Exhibit 1. Equivalent performance is assessed through energy modeling. Follow the steps below to use the Performance Path:

1. Use a RESNET-accredited Home Energy Rating software program to determine the ENERGY STAR HERS Index Target, which is the highest numerical HERS Index value that each rated home may achieve to earn the ENERGY STAR. This target shall be specifically determined for each rated home by following the steps outlined in the ENERGY STAR HERS Index Target Procedure, Version 3 (Rev. 07), available on EPA's Website. This procedure defines how to configure the ENERGY STAR Reference Design Home and calculate its associated HERS Index value and then how to apply the Size Adjustment Factor to determine the ENERGY STAR HERS Index Target.
2. Using the same RESNET-accredited Home Energy Rating software program, configure the preferred set of energy measures for the rated home and verify that the resulting HERS Index meets or exceeds the ENERGY STAR HERS Index Target, as determined in Step 1. Note that, regardless of the measures selected, Mandatory Requirements for All Certified Homes in Exhibit 2 are also required and impose certain constraints on the energy measures selected (e.g., insulation levels, insulation installation quality, window performance, duct leakage). [10,11,12,13]

   Furthermore, on-site power generation may only be used to meet the ENERGY STAR HERS Index Target for homes that are larger than the Benchmark Home and only for the incremental change in ENERGY STAR HERS Index Target caused by the Size Adjustment Factor, as outlined in the ENERGY STAR HERS Index Target Procedure, Version 3 (Rev. 07).
3. Construct the home using measures selected in Step 2 and the Mandatory Requirements for All Certified Homes, Exhibit 2.
4. Using a Rater, verify that all requirements have been met in accordance with the Mandatory Requirements for All Certified Homes and with RESNET's On-Site Inspection Procedures for Minimum Rated Features. [9]

Partnership, Training, and Credentialing Requirements

Builders, Raters, and HVAC contractors must meet the following requirements prior to certifying homes under these guidelines:

- Builders are required to be ENERGY STAR partners and complete the online Version 3 Builder Orientation. Partnership Agreements and Version 3 Builder Orientation can be found at www.energystar.gov/homesPA.
- HVAC contractors must be credentialed by an EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO). An explanation of this process and links to H-QUITOs can be found at www.energystar.gov/newhomesHVAC.
- Raters and Field Inspectors are required to complete Version 3 Training which can be found at www.energystar.gov/newhomestraining.

ENERGY STAR Certified Homes, Version 3 (Rev. 07) National Program Requirements

Exhibit 1: ENERGY STAR Reference Design

Hot Climates (2009 IECC Zones 1,2,3) [15]	**Mixed and Cold Climates** (2009 IECC Zones 4,5,6,7,8) [15]
Cooling Equipment (Where Provided) [16]	
• Cooling equipment shall meet the following applicable efficiency levels:	
• ≥ 14.5 SEER / 12 EER ENERGY STAR certified AC, **OR;** • Heat pump (See Heating Equipment)	• ≥ 13 SEER AC, **OR**; • Heat pump (See Heating Equipment)
Heating Equipment [16]	
• Heating equipment shall meet the following applicable efficiency levels:	

• ≥ 80 AFUE gas furnace, **OR;**
• ≥ 80 AFUE oil furnace, **OR;**
• ≥ 80 AFUE boiler, **OR;**
• ≥ 8.2 HSPF / 14.5 SEER / 12 EER air-source heat pump, ENERGY STAR certified with electric backup or ENERGY STAR certified dual-fuel backup heating, **OR;**
• Ground-source heat pump, any product type, ENERGY STAR certified [18]
	• ≥ 90 AFUE gas furnace, **OR;**
	• ≥ 85 AFUE oil furnace, ENERGY STAR certified, **OR;**
	• ≥ 85 AFUE boiler, ENERGY STAR certified, **OR;**
	• Air-source heat pump [17], ENERGY STAR certified with efficiency as follows:
	  • *CZ 4:* ≥ 8.5 HSPF / 14.5 SEER / 12 EER with electric backup, **OR;**
	  • *CZ 5:* ≥ 9.25 HSPF / 14.5 SEER / 12 EER with electric backup, **OR;**
	  • *CZ 6:* ≥ 9.5 HSPF / 14.5 SEER / 12 EER with electric backup, **OR;**
	• Air-source heat pump, ENERGY STAR certified, ≥ 8.2 HSPF / 14.5 SEER / 12 EER with ENERGY STAR certified dual-fuel backup, **OR;**
	• Ground-source heat pump, any product type, ENERGY STAR certified [18]

Envelope, Windows, & Doors	
• If more than 10 linear feet of ductwork are located in an unconditioned attic, a radiant barrier or ENERGY STAR certified roof product shall be installed. [19]	• No radiant barrier or ENERGY STAR certified roof product required.

- Insulation levels shall meet or exceed 2009 IECC levels and achieve Grade I installation per RESNET standards. [10,11,12]
- Infiltration rates shall be less than or equal to the following values: [20]

6 ACH50 in CZs 1,2	5 ACH50 in CZs 3,4	4 ACH50 in CZs 5,6,7	3 ACH50 in CZ 8

- Windows, doors, and skylights shall be ENERGY STAR certified, as illustrated below: [13, 21]

Window U-Value:	0.60 in CZs 1,2	0.35 in CZ 3	0.32 in CZ 4	0.30 in CZs 4 C,5,6,7,8
Window SHGC:	0.27 in CZs 1,2	0.30 in CZ 3	0.40 in CZ 4	Any in CZs 4 C,5,6,7,8

Skylight U-Value:	0.70 in CZs 1,2	0.57 in CZ 3	0.55 in CZ 4	0.55 in CZs 4 C,5,6,7,8
Skylight SHGC:	0.30 in CZs 1,2	0.30 in CZ 3	0.40 in CZ 4	Any in CZs 4 C,5,6,7,8

Doors:	Opaque: 0.21 U-Value, No SGHC Rating	≤½ lite: 0.27 U-Value, 0.30 SHGC	>½ lite: 0.32 U-Value, 0.30 SHGC

- Homes with total window-to-floor area greater than 15% shall have adjusted U-values or SHGCs as outlined in Footnote 21.

Water Heater

- DHW equipment shall meet the following efficiency requirements: [22]

Gas:	30 Gal = 0.63 EF	40 Gal = 0.61 EF	50 Gal = 0.59 EF	60 Gal = 0.57 EF	70 Gal = 0.55 EF	80 Gal = 0.53 EF
Electric:	30 Gal = 0.94 EF	40 Gal = 0.93 EF	50 Gal = 0.92 EF	60 Gal = 0.91 EF	70 Gal = 0.90 EF	80 Gal = 0.89 EF
Oil:	30 Gal = 0.55 EF	40 Gal = 0.53 EF	50 Gal = 0.51 EF	60 Gal = 0.49 EF	70 Gal = 0.47 EF	80 Gal = 0.45 EF

Thermostat & Ductwork

- Programmable thermostat shall be installed unless thermostat controls a zone with electric radiant heat, for which manual thermostat is allowed.[23]
- Supply ducts in unconditioned attics shall have insulation ≥ R-8; all other ducts in unconditioned space shall have insulation ≥ R-6.
- Total duct leakage shall be ≤ 8 CFM25 per 100 sq. ft. of conditioned floor area. [24]
- Duct leakage to outdoors shall be ≤ 4 CFM25 per 100 sq. ft. of conditioned floor area. [24,25]

Lighting & Appliances

- Where refrigerators, dishwashers, ceiling fans, or exhaust fans [26] are installed, products shall be ENERGY STAR certified.
- ENERGY STAR certified light bulbs or fixtures shall be installed in 80% of RESNET-defined Qualifying Light Fixture Locations. [27]

ENERGY STAR Certified Homes, Version 3 (Rev. 07) National Program Requirements

Exhibit 2: Mandatory Requirements for All Certified Homes

Area of Improvement	Mandatory Requirements
1. Thermal Enclosure System	• Completed Thermal Enclosure System Rater Checklist
2. Heating, Ventilation, & Air Conditioning (HVAC) System	• Completed HVAC System Quality Installation Contractor Checklist • Completed HVAC System Quality Installation Rater Checklist
3. Water Management System	• Completed Water Management System Builder Checklist

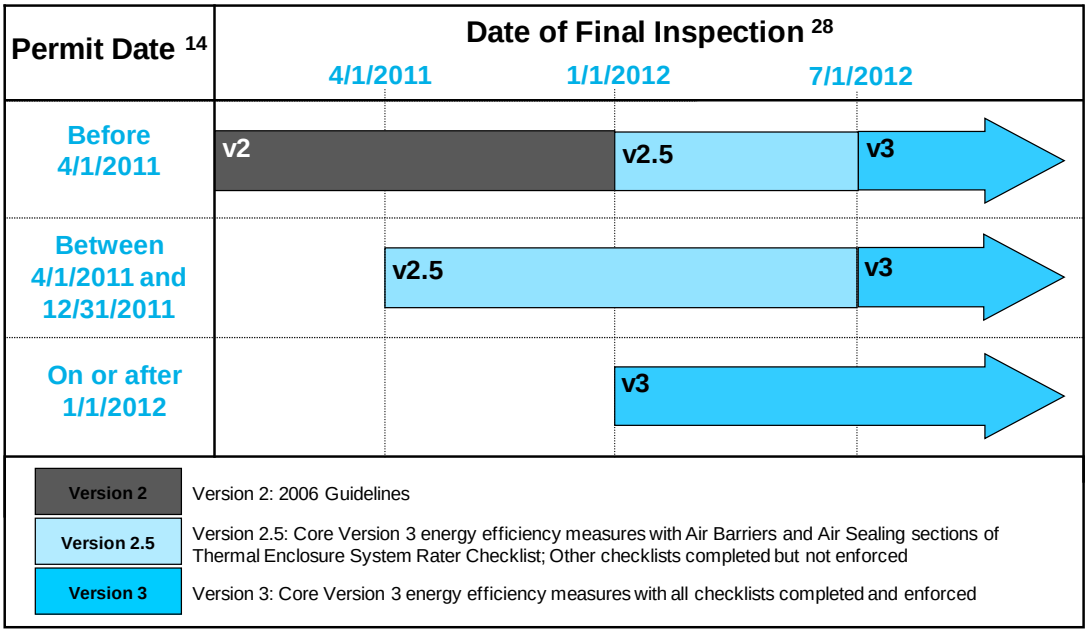
Exhibit 3: Benchmark Home [7]

Bedrooms in Home to be Built	0	1	2	3	4	5	6	7	8
Conditioned Floor Area Benchmark Home	1,000	1,000	1,600	2,200	2,800	3,400	4,000	4,600	5,200

Effective Date

Use Exhibit 4 to determine the version of the guidelines to be used when earning the ENERGY STAR through the National Program Requirements. Note that regional program requirements and associated implementation schedules have been developed for homes in CA, FL, GU, HI, MA, PR, and the Pacific Northwest.

Exhibit 4: National Program Requirements Implementation Schedule



Notes (Unless specified otherwise, notes shall apply to both the Prescriptive Path and Performance Path):

1. A dwelling unit, as defined by the 2009 IECC, is a single unit that provides complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking, and sanitation.
2. Any above-grade story with 20% or more occupiable space, including commercial space, shall be counted towards the total number of stories for the purpose of determining eligibility to participate in the program. The definition of an 'above-grade story' is one for which more than half of the gross surface area of the exterior walls is above-grade. All below-grade stories, regardless of type, shall not be included when evaluating eligibility.
3. Per ASHRAE 62.2-2010, occupiable space is any enclosed space inside the pressure boundary and intended for human activities or continual human occupancy, including, but not limited to, areas used for living, sleeping, dining, and cooking, toilets, closets, halls, storage and utility areas, and laundry areas.
4. Central systems for domestic hot water are allowed if solar energy provides at least 50% of the domestic hot water needs for the residential units.
5. Units in multifamily buildings with 4 or 5 stories above-grade, including mixed–use buildings, that have their own heating, cooling, and hot water systems, separate from other units, *but where dwelling units occupy less than 80%* of the residential (i.e., excluding commercial / retail space for mixed-use buildings) occupiable square footage of the building may earn the ENERGY STAR through either the New Homes Program or the Multifamily High Rise Program if permitted prior to July 1, 2012. Units in buildings of this type that are permitted after this date shall only be eligible to earn the ENERGY STAR through the Multifamily High Rise (MFHR) Program.

6. Where requirements of the local codes, manufacturers' installation instructions, engineering documents, or regional ENERGY STAR programs overlap with the requirements of these guidelines, EPA offers the following guidance:
    a. In cases where the overlapping requirements exceed the ENERGY STAR guidelines, these overlapping requirements shall be met;
    b. In cases where overlapping requirements conflict with a requirement of these ENERGY STAR guidelines (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these guidelines shall not be met. Certification shall only be allowed if the Rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement of these ENERGY STAR guidelines (e.g., switching from exterior to interior slab edge insulation). Note that, under the Performance Path, a home must still meet its ENERGY STAR HERS Index Target. Therefore, other efficiency measures may be needed to compensate for the omission of the conflicting requirement.
7. The average-size home with a specific number of bedrooms is termed the "Benchmark Home". The conditioned floor area of a Benchmark Home (CFA Benchmark Home) is determined by selecting the appropriate value from Exhibit 3. For homes with more than 8 bedrooms, the CFA Benchmark Home shall be determined by multiplying 600 sq. ft. times the total number of bedrooms and adding 400 sq. ft.

    Example: CFA Benchmark Home for a 10 bedroom home = (600 sq. ft. x 10) + 400 sq. ft. = 6,400 sq. ft.

    A bedroom is defined by RESNET as a room or space 70 sq. ft. or greater size, with egress window and closet, used or intended to be used for sleeping. A "den", "library", or "home office" with a closet, egress window, and 70 sq. ft. or greater size or other similar rooms shall count as a bedroom, but living rooms and foyers shall not.

    An egress window, as defined in 2009 IRC section R310, shall refer to any operable window that provides for a means of escape and access for rescue in the event of an emergency. The egress window definition has been summarized for convenience. The egress window shall:

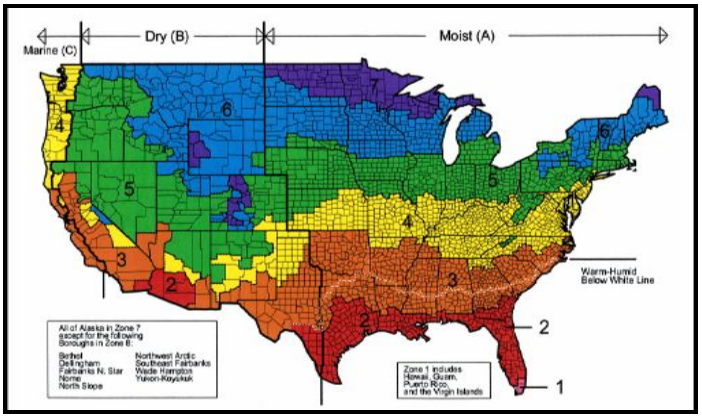
    - have a sill height of not more than 44 in. above the floor; AND
    - have a minimum net clear opening of 5.7 sq. ft.; AND
    - have a minimum net clear opening height of 24 in.; AND
    - have a minimum net clear opening width of 20 in.; AND
    - be operational from the inside of the room without the use of keys, tools or special knowledge.
8. To determine whether at least half of the basement wall area is below grade, use the gross surface area of the walls that are in contact with either the ground or ambient outdoor air, measured from the basement floor to the bottom of the basement ceiling framing (e.g., the bottom of the joists for the floor above). Note that the exception regarding the floor area in basements is only for the purpose of determining a home's Benchmark Home Size, Size Adjustment Factor, and eligibility to use the Prescriptive Path. The full conditioned floor area, per RESNET's standards, should be used when rating the home (e.g., determining compliance with duct leakage requirements).
9. The term 'Rater' refers to the person completing the third-party inspections required for certification. This person shall: a) be a certified Home Energy Rater, Rating Field Inspector, BOP Inspector, or an equivalent designation as determined by a Verification Oversight Organization such as RESNET; and, b) have attended and successfully completed an EPA-recognized training class. See www.energystar.gov/newhomestraining. Raters who operate under a Sampling Provider are permitted to verify the Minimum Rated Features of the home using the RESNET-approved sampling protocol.
10. Insulation levels in a home shall meet or exceed the component insulation requirements in the 2009 IECC - Table 402.1.1. The following exceptions apply:
    a. Steel-frame ceilings, walls, and floors shall meet the insulation requirements of the 2009 IECC – Table 402.2.5. In CZ 1 and 2, the continuous insulation requirements in this table shall be permitted to be reduced to R-3 for steel-frame wall assemblies with studs spaced at 24 in. on center. This exception shall not apply if the alternative calculations in d) are used;
    b. For ceilings with attic spaces, R-30 shall satisfy the requirement for R-38 and R-38 shall satisfy the requirement for R-49 wherever the full height of uncompressed insulation at the lower R-value extends over the wall top plate at the eaves. This exemption shall not apply if the alternative calculations in d) are used;
    c. For ceilings without attic spaces, R-30 shall satisfy the requirement for any required value above R-30 if the design of the roof / ceiling assembly does not provide sufficient space for the required insulation value. This exemption shall be limited to 500 square ft. or 20% of the total insulated ceiling area, whichever is less. This exemption shall not apply if the alternative calculations in d) are used;
    d. An alternative equivalent U-factor or total UA calculation may also be used to demonstrate compliance, as follows:

        An assembly with a U-factor equal or less than specified in 2009 IECC Table 402.1.3 complies.

        A total building thermal envelope UA that is less than or equal to the total UA resulting from the U-factors in Table 402.1.3 also complies. The insulation levels of all non-fenestration components (i.e., ceilings, walls, floors, and slabs) can be traded off using the UA approach under both the Prescriptive and the Performance Path. Note that fenestration products (i.e., windows, skylights, doors) shall not be included in this calculation. Also, note that while ceiling and slab insulation can be included in trade-off calculations, Items 4.1 through 4.3 of the Thermal Enclosure System Rater Checklist shall be met regardless of the UA tradeoffs calculated. The UA calculation shall be done using a method consistent with the ASHRAE Handbook of Fundamentals and shall include the thermal bridging

effects of framing materials. The calculation for a steel-frame envelope assembly shall use the ASHRAE zone method or a method providing equivalent results, and not a series-parallel path calculation method.

11. Consistent with the 2009 IECC, slab edge insulation is only required for slab-on-grade floors with a floor surface less than 12 inches below grade. Slab insulation shall extend to the top of the slab to provide a complete thermal break. If the top edge of the insulation is installed between the exterior wall and the edge of the interior slab, it shall be permitted to be cut at a 45-degree angle away from the exterior wall.
12. Insulation shall be verified by a Rater to achieve Grade I installation as defined in the RESNET Standards, except for ceiling, wall, and floor assemblies with continuous rigid insulation. For such homes, Grade II installation is acceptable for the cavity insulation only if the continuous rigid insulation meets or exceeds the following levels: R-3 in Climate Zones 1 to 4; R-5 in Zones 5 to 8.
13. *For Prescriptive Path:* All windows, doors, and skylights shall meet or exceed ENERGY STAR Program Requirements for Residential Windows, Doors, and Skylights – Version 5.0 as outlined at www.energystar.gov/windows. *For Performance Path:* All windows, doors and skylights shall meet or exceed the component U-factor and SHGC requirements specified in the 2009 IECC – Table 402.1.1. If no NFRC rating is noted on the window or in product literature (e.g., for site-built fenestration), select the U-factor and SHGC value from Tables 4 and 14, respectively, in 2005 ASHRAE Fundamentals, Chapter 31. Select the highest U-factor and SHGC value among the values listed for the known window characteristics (e.g., frame type, number of panes, glass color, and presence of low-e coating). Note that the U-factor requirement applies to all fenestration while the SHGC only applies to the glazed portion. The following exceptions apply:
    a. An area-weighted average of fenestration products shall be permitted to satisfy the U-factor requirements;
    b. An area-weighted average of fenestration products more than 50% glazed shall be permitted to satisfy the SHGC requirements;
    c. 15 square feet of glazed fenestration per dwelling unit shall be exempt from the U-factor and SHGC requirements, and shall be excluded from area-weighted averages calculated using a) and b), above;
    d. One side-hinged opaque door assembly up to 24 square feet in area shall be exempt from the U-factor requirements and shall be excluded from area-weighted averages calculated using a) and b), above;
    e. Fenestration utilized as part of a passive solar design shall be exempt from the U-factor and SHGC requirements, and shall be excluded from area-weighted averages calculated using a) and b), above. Exempt windows shall be facing within 45 degrees of true South and directly coupled to thermal storage mass that has a heat capacity > 20 btu / $ft^3 x^oF$ and provided in a ratio of at least 3 sq. ft. per sq. ft. of South facing fenestration. Generally, thermal mass materials will be at least 2 in. thick.
14. The Rater may define the 'permit date' as either the date that the permit was issued or the date of the contract on the home. In cases where permit or contract dates are not available, Providers have discretion to estimate permit dates based on other construction schedule factors. These assumptions should be both defensible and documented.
15. The following map is shown to depict Climate Zone boundaries. It is for illustrative purposes only and is based on 2009 IECC Figure 301.1.



16. *For Prescriptive Path:* Where ENERGY STAR certified heating or cooling systems are required, all installed equipment of that system type must be ENERGY STAR certified.
17. *For Prescriptive Path:* The required efficiency for air source heat pumps in Climate Zones 4, 5, & 6 exceed the ENERGY STAR minimum of 8.2 HSPF. Air source heat pumps with electric resistance backup heating cannot be used in homes certified in Climate Zones 7 & 8 using the Prescriptive Path.
18. *For Prescriptive Path:* The following efficiency levels shall be used based on ground-source heat pump product type:
    - *Closed Loop Water-to-Air*: ≥ 3.5 COP / 16.1 EER
    - Open Loop Water-to-Air: ≥ 3.8 COP / 18.2 EER
    - Direct Geo-Exchange (DGX): ≥ 3.6 COP / 16 EER
    - Closed Loop Water-to-Water: ≥ 3.0 COP / 15.1 EER
    - Open Loop Water-to-Water: ≥ 3.4 COP / 19.1 EER
19. Any radiant barrier with a minimum initial reflectance of 0.90 and maximum initial emittance of 0.10 meets the intent of a radiant barrier.

20. Envelope leakage shall be determined by a Rater using a RESNET-approved testing protocol.
21. *For Prescriptive Path:* All decorative glass and skylight window areas count toward the total window area to above-grade conditioned floor area (WFA) ratio. For homes using the Prescriptive Path that have a WFA ratio > 15%, the following additional requirements apply:
    a. In Climate Zones 1, 2, and 3, an improved window SHGC is required and is determined by:

       Improved SHGC = [0.15 / WFA] x [ENERGY STAR SHGC]

       Where the ENERGY STAR SHGC is the maximum allowable SHGC in Exhibit 1, ENERGY STAR Reference Design, for the Climate Zone where the home will be built.

    b. In Climate Zones 4, 5, 6, 7, and 8, an improved window U-Value is required and is determined by:

       Improved U-Value = [0.15 / WFA] x [ENERGY STAR U-Value]

       Where the ENERGY STAR U-Value is the maximum allowable U-Value in Exhibit 1, ENERGY STAR Reference Design, for the Climate Zone where the home will be built.
22. *For Prescriptive Path:* To determine domestic hot water (DHW) EF requirements for additional tank sizes, use the following equations: Gas DHW EF ≥ 0.69 - (0.002 x Tank Gallon Capacity); Electric DHW EF ≥ 0.97 - (0.001 x Tank Gallon Capacity); Oil DHW EF ≥ 0.61 - (0.002 x Tank Gallon Capacity). The minimum efficiency for instantaneous water heaters shall be determined using the above equations and assuming a 1 gallon capacity.

    Domestic hot water systems that are integrated with the space-heating system are permitted to be used in the following two scenarios: either the space-heating system (e.g., furnace or boiler) shall heat and circulate a fluid through an indirect storage tank, or a single integrated/combined product intended for both space heating and domestic hot water shall be used. A 'tankless coil water heater', where domestic water flows through a coil installed in the space-heating system, is not permitted.
23. For homes with heat pumps that contain an electric resistance heating element used to supplement the capacity of the heat pump, the thermostat shall have 'Adaptive Recovery' technology to prevent excessive use of the heating element.
24. Duct leakage shall be determined by a Rater using a RESNET-approved testing protocol. Leakage limits shall be assessed on a per-system, rather than per-home, basis.
25. For homes that have ≤ 1,200 sq. ft. of conditioned floor area, measured duct leakage to outdoors shall be ≤ 5 CFM25 per 100 sq. ft. of conditioned floor area. Testing of duct leakage to the outside can be waived if all ducts & air handling equipment are located within the home's air and thermal barriers AND envelope leakage has been tested to be less than or equal to half of the Prescriptive Path infiltration limit for the Climate Zone where the home is to be built. Alternatively, testing of duct leakage to the outside can be waived if total duct leakage is ≤ 4 CFM25 per 100 sq. ft. of conditioned floor area, or ≤ 5 CFM25 per 100 sq. ft. of conditioned floor area for homes that have less than 1,200 sq. ft. of conditioned floor area.
26. *For Prescriptive Path:* All exhaust fans shall be ENERGY STAR certified, except in half bathrooms. A half bathroom is any bathroom that does not contain a bathtub, shower, spa, or similar source of moisture.
27. *For Prescriptive Path:* The ENERGY STAR Advanced Lighting Package (ALP), which requires a minimum of 60% ENERGY STAR certified hard-wired fixtures and 100% ENERGY STAR certified ceiling fans, where installed, may also be used to comply with the lighting requirements.
28. The date of the final inspection for the home (i.e., the date at which all of the field inspections are complete for the home, not necessarily the date when the label is issued).